

Abstract of the invention

A wireless communications apparatus and corresponding system having an improved DAC operable at higher speed than heretofore achievable which exploits the sigma-delta principle in a different way. More particularly, the invention comprises a wireless user terminal (302) and corresponding system (300) that implement a digital-to-analog conversion circuit (105) including a storage means (110), such as a read only memory, for storing delta-sigma analog sequences corresponding to all possible values of a digital input (106) coupled to a plurality of one-bit digital to analog converters (120, 122, 124, 126). Each of the digital-to-analog converters (120, 122, 124, 126) are clocked by multi-phase clocks, such that each phase applied to each one of the digital-to-analog converters (120, 122, 124, 126) is delayed with respect to one another by the oversampling period. An summer is coupled to each digital-to-analog converter (120, 122, 124, 126) for summing each output from each digital-to-analog converter (120, 122, 124, 126) to generate an analog output. Hereby, the digital-to-analog conversion circuit (105) according to the invention emulates a delta-sigma digital-to-analog converter having both high speed and high resolution.